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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,856	08/22/2003	Hisham S. Abdel-Ghaffar	29250-000924/US	8128

7590 11/19/2007
HARNESS, DICKEY & PIERCE, P.L.C.
P.O. Box 8910
Reston, VA 20195

EXAMINER

FOX, BRYAN J

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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11/19/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/645,856	Applicant(s) ABDEL-GHAFFAR ET AL.	
	Examiner Bryan J. Fox	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 21, 22, 24, 26, 27, 29 and 31-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 21, 22, 24, 26, 27, 29 and 31-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 24, 2007 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3, 4, 6, 21, 23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Helander (US006728237B2) in view of Longoni (US 20020052206A1), and further in view of Al-Housami (US 20010016497A1).

Regarding **claim 1**, Helander discloses sending load status information periodically in a cellular communication system (see column 8, lines 47-61), which reads on the claimed, "method of receiving load information of a cell in a wireless communication system." Helander further discloses that the load status information is "piggy-backed" on the payload messages (see column 9, lines 16-35) resulting in the higher the load, the more information about the load received (see column 9, line 61 – column 10, line 12). Helander fails to expressly disclose a reporting periodicity more frequent than the first reporting frequency.

In a similar field of endeavor, Longoni discloses the load information may not be transmitted if a critical threshold is not reached (see paragraph 48).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Helander with Longoni to include the above not reporting the load information if a critical threshold is not reached in order to prevent the addition of a congested cell to the active set of a MS as suggested by Longoni (see paragraph 22). The resultant combination reads on the claimed, "determining a cell loading state based on a comparison of cell loading to one or more thresholds associated with different periodicities...receiving the cell load information at a first reporting periodicity, if the cell is determined to be in a low cell loading state, and receiving the cell load information at a second reporting periodicity more frequent than the first reporting periodicity, if the cell is determined to be in a high cell loading state." The combination of Helander and Longoni fails to teach determining a cell loading state based on a comparison of cell

loading to one or more thresholds, the one or more thresholds being adaptive depending on cell service mix.

In a similar field of endeavor, Al-Housami discloses a dynamic limit is set which varies in accordance with the proportion of high rate terminals which are active in a particular telecommunications cell (see paragraph 19), which reads on the claimed, "the thresholds being adaptive depending on cell service mix."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Helander and Longoni with Al-Housami to include the above dynamic limit which varies in accordance with the proportion of high rate terminals in order to improve resource allocation as suggested by Al-Housami (see paragraph 8).

Regarding **claim 4**, Helander discloses sending load status information periodically in a cellular communication system (see column 8, lines 47-61), which reads on the claimed, "method of receiving cell load information in a wireless communication system." Helander further discloses that the load status information is "piggy-backed" on the payload messages (see column 9, lines 16-35) resulting in the higher the load, the more information about the load received (see column 9, line 61 – column 10, line 12). Helander fails to expressly disclose a reporting periodicity more frequent than the first reporting frequency.

In a similar field of endeavor, Longoni discloses the load information may not be transmitted if a critical threshold is not reached (see paragraph 48).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Helander with Longoni to include the above not reporting the load information if a critical threshold is not reached in order to prevent the addition of a congested cell to the active set of a MS as suggested by Longoni (see paragraph 22). The resultant combination reads on the claimed, "determining a cell loading state based on a comparison of cell loading to one or more thresholds associated with different periodicities...receiving the cell load information at a first reporting periodicity, if the cell is determined to be in a low cell loading state, and receiving the cell load information at a second reporting periodicity more frequent than the first reporting periodicity, if the cell is determined to be in a high cell loading state." The combination of Helander and Longoni fails to teach determining a cell loading state based on a comparison of cell loading to one or more thresholds, the one or more thresholds being adaptive depending on cell service mix.

In a similar field of endeavor, Al-Housami discloses a dynamic limit is set which varies in accordance with the proportion of high rate terminals which are active in a particular telecommunications cell (see paragraph 19), which reads on the claimed, "the thresholds being adaptive depending on cell service mix."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Helander and Longoni with Al-Housami to include the above dynamic limit which varies in accordance with the proportion of high rate terminals in order to improve resource allocation as suggested by Al-Housami (see paragraph 8).

Regarding **claims 3 and 6**, Helander fails to disclose the use of a universal mobile telephone service system.

In a similar field of endeavor, Longoni discloses the use of UMTS (see paragraph 41).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Helander for use with universal mobile telephone service in order to take advantage of the benefits of UMTS, such as higher capacity and data speeds. The combination of Helander and Longoni fails to teach determining a cell loading state based on a comparison of cell loading to one or more thresholds, the one or more thresholds being adaptive depending on cell service mix.

In a similar field of endeavor, Al-Housami discloses a dynamic limit is set which varies in accordance with the proportion of high rate terminals which are active in a particular telecommunications cell (see paragraph 19), which reads on the claimed, "determining a cell loading state based on a comparison of cell loading to one or more thresholds, the one or more thresholds being adaptive depending on cell service mix."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Helander and Longoni with Al-Housami to include the above dynamic limit which varies in accordance with the proportion of high rate terminals in order to improve resource allocation as suggested by Al-Housami (see paragraph 8).

Regarding **claims 21 and 26**, the combination of Helander and Longoni discloses that a limit may also be given, upon exceeding of which limit, the provision of

load status information to the message composing means is activated (see Helander column 12, lines 18-32) and a dynamic limit is set which varies in accordance with the proportion of high rate terminals which are active in a particular telecommunications cell (see Al-Housami paragraph 19) which reads on the claimed, "the one or more thresholds are adaptive depending on cell loading and the cell service mix."

Claims 2 and 5 rejected under 35 U.S.C. 103(a) as being unpatentable over Helander in view of Longoni and Al-Housami, as applied to claims 1 and 4 above, and further in view of Ahn (US 20020022487A1).

Regarding **claims 2 and 5**, the combination of Helander, Longoni and Al-Housami fails to expressly disclose that the cell load information is provided on one of a dedicated channel and a shared channel.

In a similar field of endeavor, Ahn discloses receiving the load information over a common channel (see paragraph 91).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Helander and Longoni with Ahn to include the above sending load information over the common channel in order to save system resources used by dedicated channels.

Claims 22, 27, 31, 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Helander in view of Longoni and Al-Housami, and further in view of Naslund (US006223031B1).

Regarding **claims 22 and 27**, the combination of Helander and Longoni fails to disclose different thresholds for the uplink and downlink.

In a similar field of endeavor, Naslund discloses different thresholds for the uplink and the downlink (see column 9, lines 55-65).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Helander and Longoni with Naslund to include the above different thresholds for the uplink and downlink in case it is more important to have good quality on the uplink than on the downlink, for example, as suggested by Naslund (see column 9, lines 55-65).

Regarding **claim 31**, Helander discloses sending load status information periodically in a cellular communication system (see Helander column 8, lines 47-61), which reads on the claimed, "method of receiving load information of a cell in a wireless communication system." Helander further discloses that the load status information is "piggy-backed" on the payload messages (see column 9, lines 16-35) resulting in the higher the load, the more information about the load received (see column 9, line 61 – column 10, line 12). Helander fails to expressly disclose a reporting periodicity more frequent than the first reporting frequency.

In a similar field of endeavor, Longoni discloses the load information may not be transmitted if a critical threshold is not reached (see paragraph 48).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Helander with Longoni to include the above not reporting the load information if a critical threshold is not reached in order to prevent the addition of a

congested cell to the active set of a MS as suggested by Longoni (see paragraph 22). The resultant combination reads on the claimed, "comparing a given cell loading measurement against one or two thresholds associated with different periodicities...receiving the cell load information at a first reporting periodicity, if the cell is determined to be in a low cell loading state, and receiving the cell load information at a second reporting periodicity more frequent than the first reporting periodicity, if the cell is determined to be in a high cell loading state." The combination of Helander and Longoni fails to teach the one of two thresholds being adaptive depending on cell service mix.

In a similar field of endeavor, Al-Housami discloses a dynamic limit is set which varies in accordance with the proportion of high rate terminals which are active in a particular telecommunications cell (see paragraph 19), which reads on the claimed, "the thresholds are adaptive depending on cell service mix."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Helander and Longoni with Al-Housami to include the above dynamic limit which varies in accordance with the proportion of high rate terminals in order to improve resource allocation as suggested by Al-Housami (see paragraph 8). The combination of Helander, Longoni and Al-Housami fails to disclose different thresholds for the uplink and downlink.

In a similar field of endeavor, Naslund discloses different thresholds for the uplink and the downlink (see column 9, lines 55-65).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Helander and Longoni with Naslund to include the above different thresholds for the uplink and downlink in case it is more important to have good quality on the uplink than on the downlink, for example, as suggested by Naslund (see column 9, lines 55-65).

Regarding **claim 32**, the combination of Helander, Longoni, Al-Housami and Naslund discloses that a limit may also be given, upon exceeding of which limit, the provision of load status information to the message composing means is activated (see Helander column 12, lines 18-32), which reads on the claimed, "reporting the cell load measurement information at a first periodic interval, if the cell load is below the uplink loading threshold or downlink loading threshold, else reporting the cell load measurement information at a second periodic interval shorter than the first, as the cell load exceeds the uplink loading threshold or downlink loading threshold."

Regarding **claim 35**, the combination of Helander, Longoni, Al-Housami and Naslund discloses that a limit may also be given, upon exceeding of which limit, the provision of load status information to the message composing means is activated (see Helander column 12, lines 18-32) and a dynamic limit is set which varies in accordance with the proportion of high rate terminals which are active in a particular telecommunications cell (see Al-Housami paragraph 19) which reads on the claimed, "the of two thresholds is adaptive depending on cell loading and the cell service mix."

Claims 24 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Helander (US006728237B2) in view of Longoni (US 20020052206A1).

Regarding **claim 24**, Helander discloses sending load status information periodically in a cellular communication system (see column 8, lines 47-61), which reads on the claimed, "method of receiving cell load information in a wireless communication system." Helander further discloses that the load status information is "piggy-backed" on the payload messages (see column 9, lines 16-35) resulting in the higher the load, the more information about the load received (see column 9, line 61 – column 10, line 12). The load status information is sent if the load status undergoes a change exceeding a given value (see Helander column 10, lines 12-46). Helander fails to expressly disclose a reporting periodicity more frequent than the first reporting frequency.

In a similar field of endeavor, Longoni discloses the load information may not be transmitted if a critical threshold is not reached (see paragraph 48).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Helander with Longoni to include the above not reporting the load information if a critical threshold is not reached in order to prevent the addition of a congested cell to the active set of a MS as suggested by Longoni (see paragraph 22). The resultant combination reads on the claimed, "determining a cell loading state based on a comparison of cell loading to one or more thresholds associated with different periodicities...receiving the cell load information at a first reporting periodicity, if the cell is determined to be in a low cell loading state, and receiving the cell load information at

a second reporting periodicity more frequent than the first reporting periodicity, if the cell is determined to be in a high cell loading state.”

Regarding **claim 29**, Helander discloses sending load status information periodically in a cellular communication system (see column 8, lines 47-61), which reads on the claimed, “method of providing cell load information in a wireless communication system.” Helander further discloses that the load status information is “piggy-backed” on the payload messages (see column 9, lines 16-35) resulting in the higher the load, the more information about the load received (see column 9, line 61 – column 10, line 12). The load status information is sent if the load status undergoes a change exceeding a given value (see Helander column 10, lines 12-46). Helander fails to expressly disclose a reporting periodicity more frequent than the first reporting frequency.

In a similar field of endeavor, Longoni discloses the load information may not be transmitted if a critical threshold is not reached (see paragraph 48).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Helander with Longoni to include the above not reporting the load information if a critical threshold is not reached in order to prevent the addition of a congested cell to the active set of a MS as suggested by Longoni (see paragraph 22). The resultant combination reads on the claimed, “determining a cell loading state based on a comparison of cell loading to one or more thresholds associated with different periodicities...receiving the cell load information at a first reporting periodicity, if the cell is determined to be in a low cell loading state, and receiving the cell load

information at a second reporting periodicity more frequent than the first reporting periodicity, if the cell is determined to be in a high cell loading state.”

Claims 33 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Helander in view of Longoni, Al-Housami and Naslund as applied to claim 31 above, and further in view of Sawyer (US005794140A).

Regarding **claim 33**, the combination of Helander, Longoni, Al-Housami and Naslund fails to disclose the consumption margins for the uplink and downlink are based on maximum consumption values for corresponding supported services in the uplink and downlink.

In a similar field of endeavor, Sawyer discloses a threshold 42 relative to a maximum load 32 for uplink and downlink (see column 3, line 49 – column 5, line 13 and figures 2A and 2B).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Helander, Longoni, Al-Housami and Naslund with Sawyer to include the above threshold relative to a maximum load for uplink and downlink in order to avoid exceeding the capacity of the system.

Regarding **claim 34**, the combination of Helander, Longoni, Al-Housami and Naslund fails to disclose the given load measurement for comparison against the uplink threshold is measured by a radio network controller, and the given cell load measurement for the comparison against the downlink threshold is measured by the cell itself.

In a similar field of endeavor, Sawyer discloses a number of load measuring devices 40(1)-40(6), some associated with the cell and some associated with the MSC (see column 6, lines 25-42 and column 7, lines 23-60 and figure 1), which reads on the claimed, "the given load measurement for comparison against the uplink threshold is measured by a radio network controller, and the given cell load measurement for the comparison against the downlink threshold is measured by the cell itself."

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Helander, Longoni, Al-Housami and Naslund with Sawyer to include the above load measuring devices in order to assure that the loading of other devices is not exceeded as suggested by Sawyer (see column 7, lines 23-41).

Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Helander in view of Longoni, and further in view of Naslund (US006223031B1).

Regarding **claim 36**, Helander discloses sending load status information periodically in a cellular communication system (see Helander column 8, lines 47-61), which reads on the claimed, "method of receiving load information of a cell in a wireless communication system." Helander further discloses that the load status information is "piggy-backed" on the payload messages (see column 9, lines 16-35) resulting in the higher the load, the more information about the load received (see column 9, line 61 – column 10, line 12). The load status information is sent if the load status undergoes a change exceeding a given value (see Helander column 10, lines 12-46), which reads on

the claimed, "the thresholds are adaptive depending on cell loading." Helander fails to expressly disclose a reporting periodicity more frequent than the first reporting frequency.

In a similar field of endeavor, Longoni discloses the load information may not be transmitted if a critical threshold is not reached (see paragraph 48).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Helander with Longoni to include the above not reporting the load information if a critical threshold is not reached in order to prevent the addition of a congested cell to the active set of a MS as suggested by Longoni (see paragraph 22). The resultant combination reads on the claimed, "comparing a given cell leading measurement against one of two thresholds associated with different periodicities...receiving the cell load information at a first reporting periodicity, if the cell is determined to be in a low cell loading state, and receiving the cell load information at a second reporting periodicity more frequent than the first reporting periodicity, if the cell is determined to be in a high cell loading state." The combination of Helander, Longoni and Al-Housami fails to disclose different thresholds for the uplink and downlink.

In a similar field of endeavor, Naslund discloses different thresholds for the uplink and the downlink (see column 9, lines 55-65).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Helander and Longoni with Naslund to include the above different thresholds for the uplink and downlink in case it is more

important to have good quality on the uplink than on the downlink, for example, as suggested by Naslund (see column 9, lines 55-65).

Response to Arguments

Applicant's arguments filed August 24, 2007 have been fully considered but they are not persuasive.

The Applicant argues the combination of Helander, Longoni and Al-Housami fails to disclose determining a cell loading state based on a comparison of cell loading to one or more thresholds associated with different periodicities. The Examiner respectfully disagrees. Longoni discloses the load information may not be transmitted if a critical threshold is not reached (see paragraph 48), fulfilling the claimed limitation, wherein the critical threshold reads on the one or more thresholds associated with different periodicities and the state of not sending cell loading information reads on one of the periodicities.

The Applicant makes similar arguments with respect to the remainder of the claims, however, for the same reasons outlined above, the Examiner respectfully disagrees.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan J. Fox whose telephone number is (571) 272-7908. The examiner can normally be reached on Monday through Friday 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles N. Appiah can be reached on (571) 272-7904. The fax phone

Application/Control Number:
10/645,856
Art Unit: 2617

Page 17

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Bryan Fox
November 9, 2007


CHARLES N. APPIAH
SUPERVISORY PATENT EXAMINER